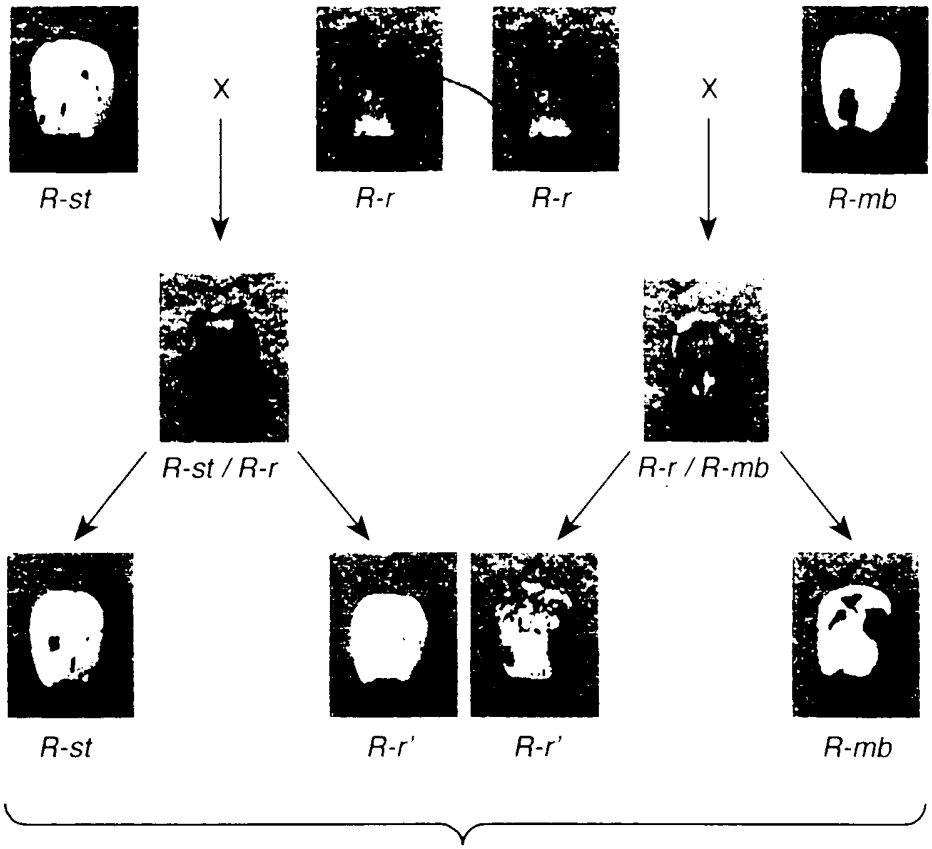


FIG._1A

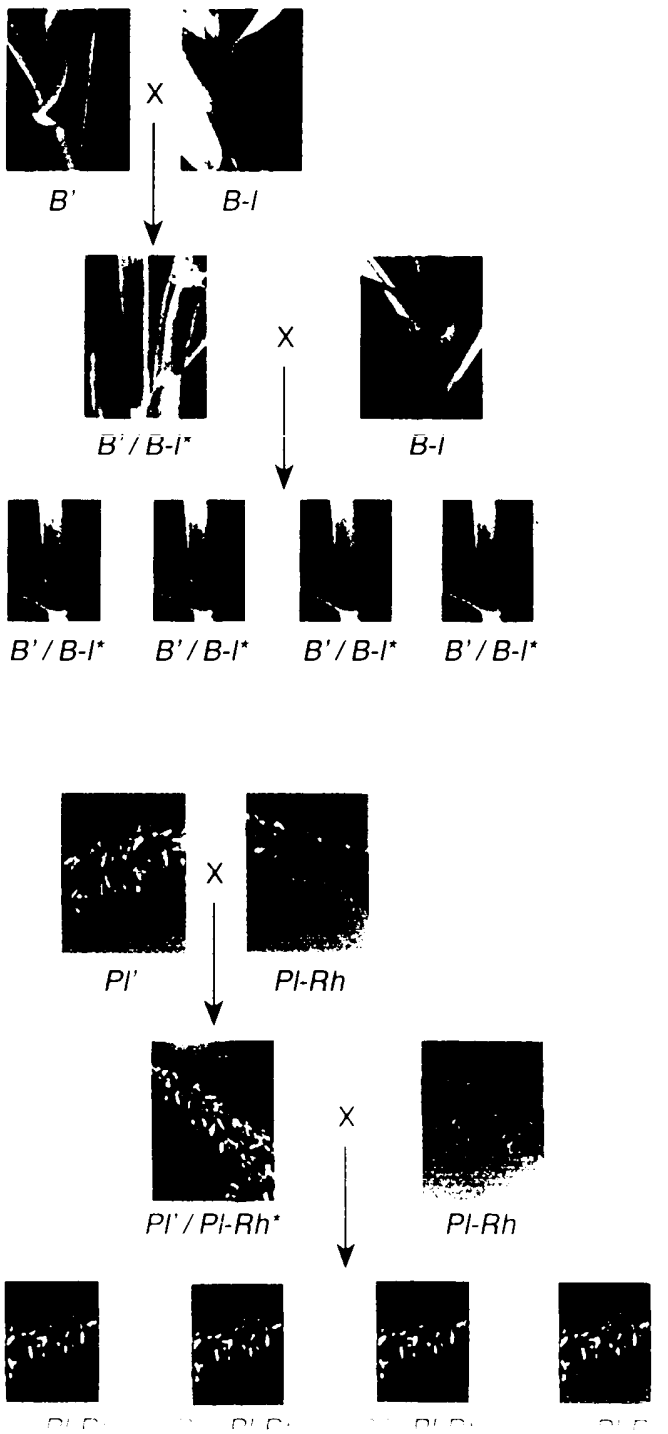


FIG._1B

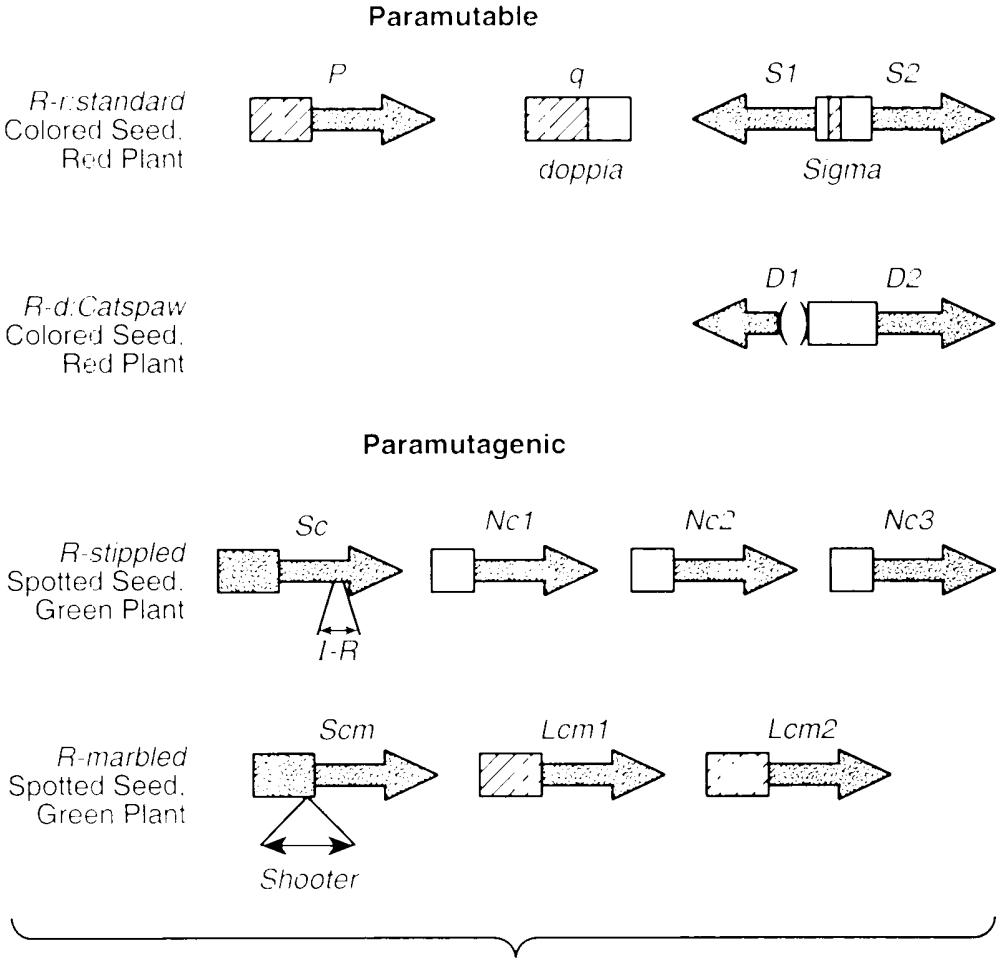

Paramutable
R-r:standard
Colored Seed.
Red Plant
P
q
S1
S2
doppia
Sigma
R-d:Catspaw
Colored Seed.
Red Plant
D1
D2
Paramutagenic
R-stippled
Spotted Seed.
Green Plant
Sc
Nc1
Nc2
Nc3
I-R
R-marbled
Spotted Seed.
Green Plant
Scm
Lcm1
Lcm2
Shooter

FIG._2A

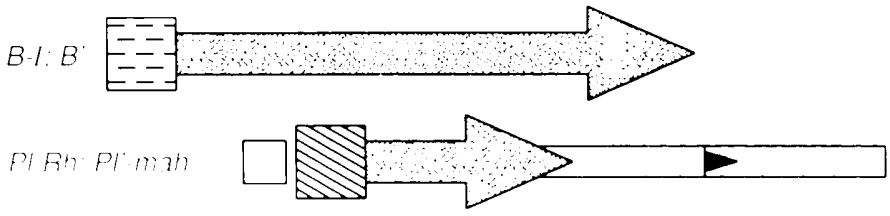

B-I: B'
Pl-Rh: Pl'-rah

FIG._2B

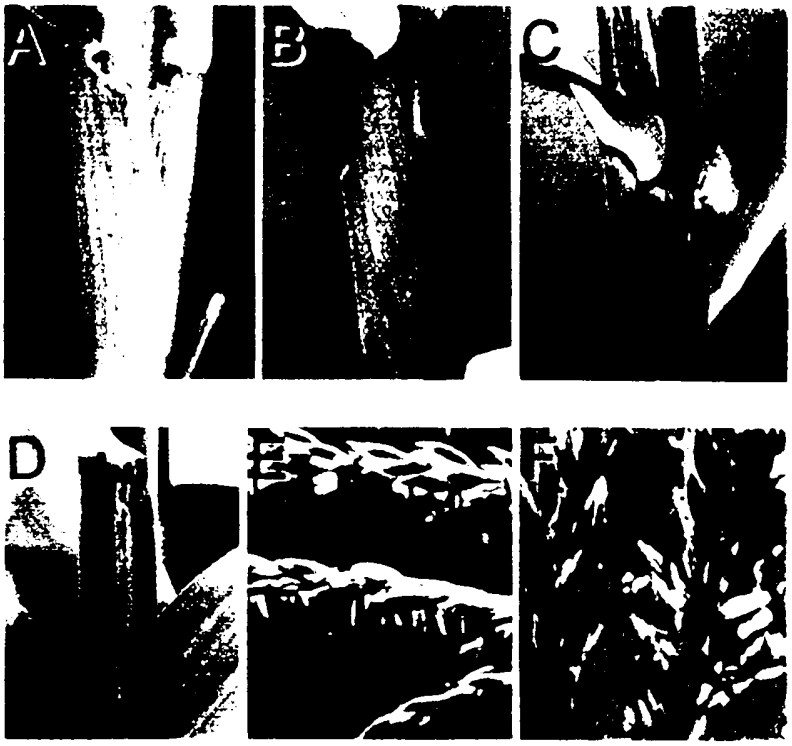


FIG._3A B' Mop1 / mop1-1

FIG._3B B' mop1-1 / mop1-1

FIG._3C B-I Mop1 / Mop1

FIG._3D B' Sectors in a B' mop1-1 Plant

FIG._3E Pl' Mop1 / -

FIG._3F Pl' mop1-1 / mop1-1

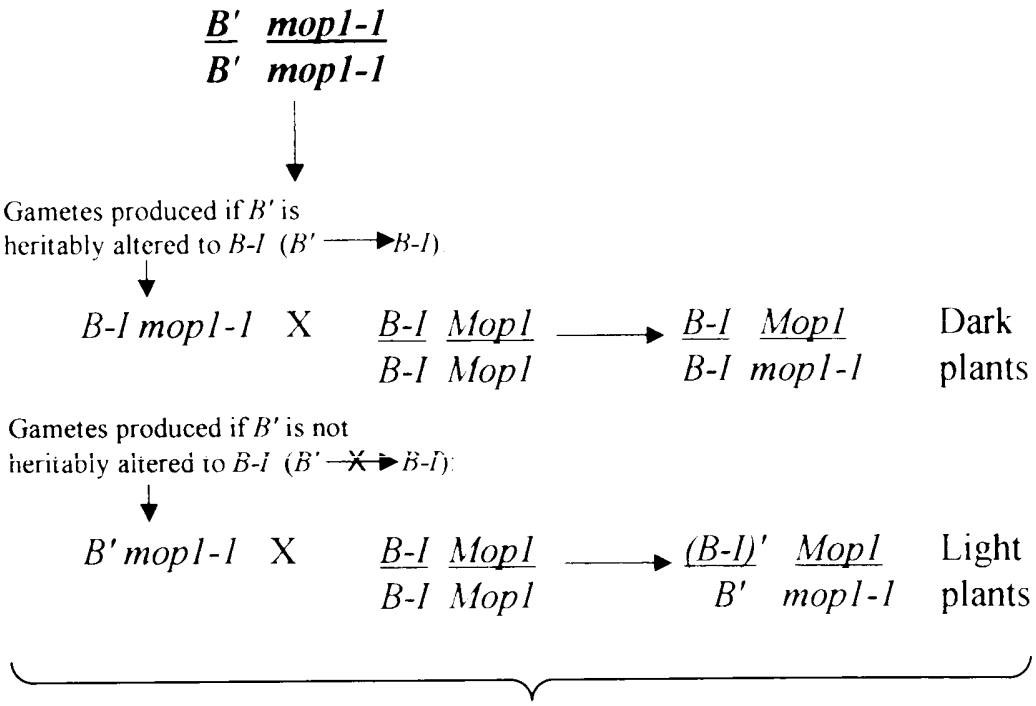

B' mop1-1
B' mop1-1
Gametes produced if B' is heritably altered to B-I (B' → B-I)
B-I mop1-1 X B-I Mop1 / B-I Mop1 → B-I Mop1 / B-I mop1-1 Dark plants
Gametes produced if B' is not heritably altered to B-I (B' → B-I)
B' mop1-1 X B-I Mop1 / B-I Mop1 → (B-I)' Mop1 / B' mop1-1 Light plants

FIG._4A

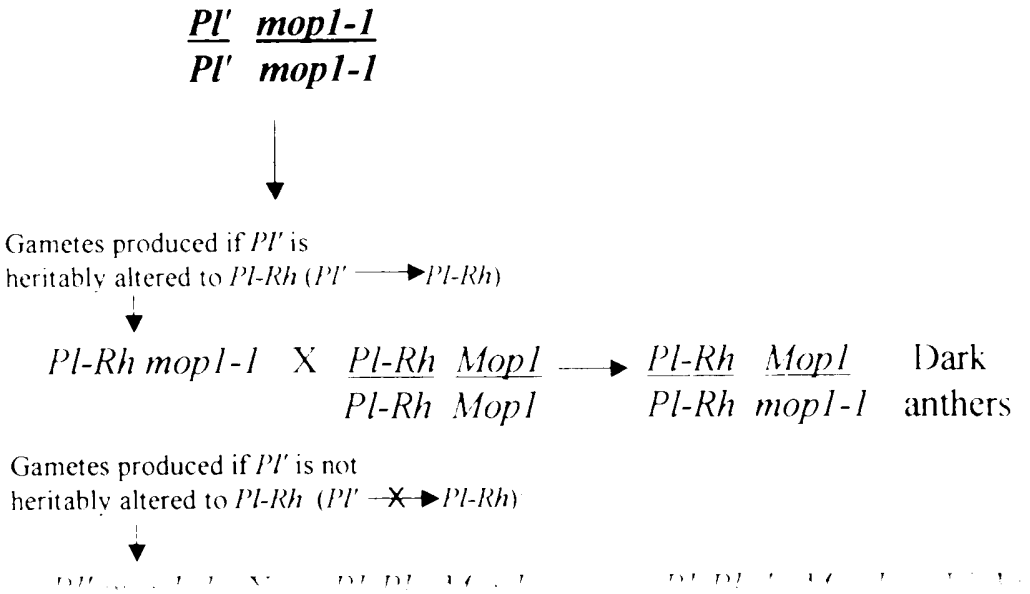

Pl' mop1-1
Pl' mop1-1
Gametes produced if Pl' is heritably altered to Pl-Rh (Pl' → Pl-Rh)
Pl-Rh mop1-1 X Pl-Rh Mop1 / Pl-Rh Mop1 → Pl-Rh Mop1 / Pl-Rh mop1-1 Dark anthers
Gametes produced if Pl' is not heritably altered to Pl-Rh (Pl' → Pl-Rh)

FIG._4B

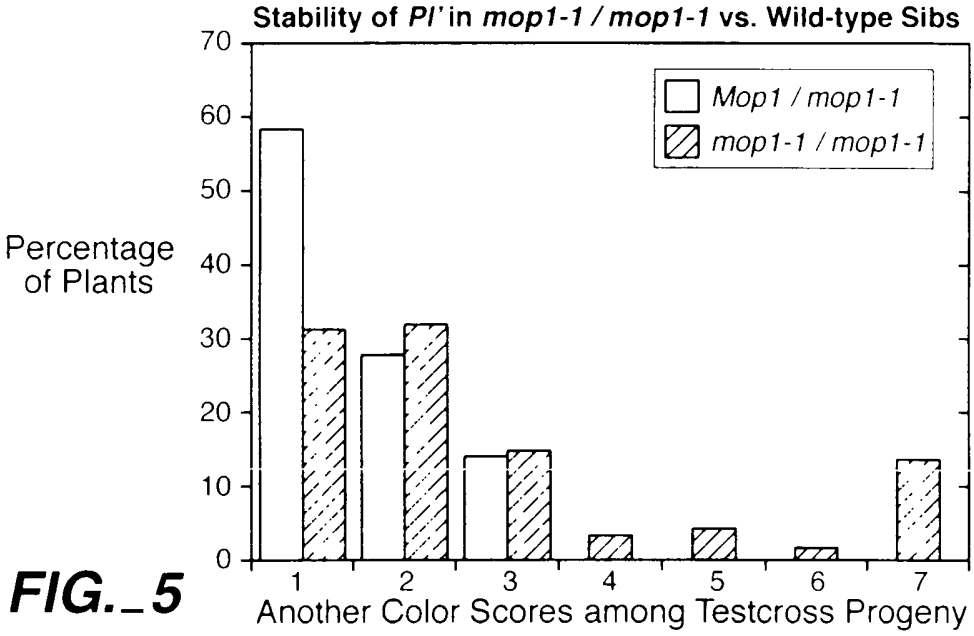


FIG._5

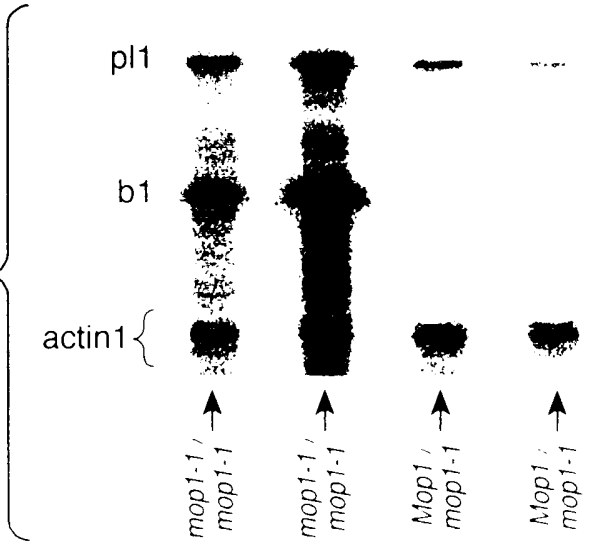


FIG._6A

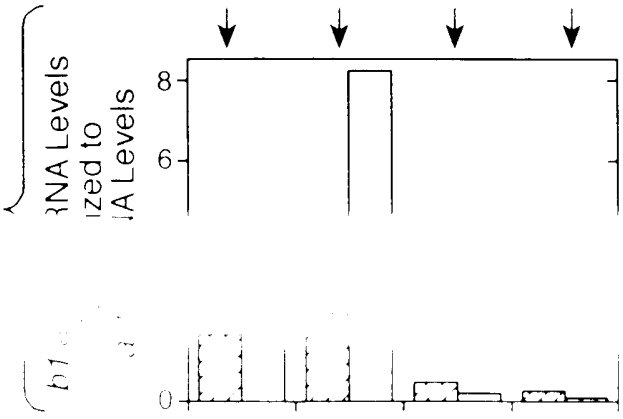


FIG 6B

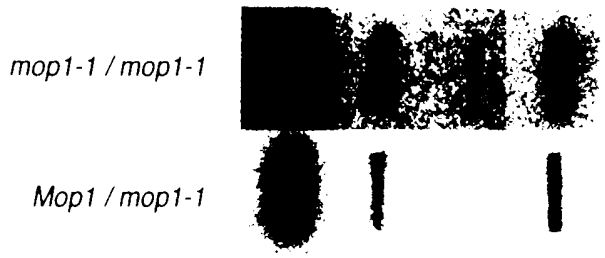


FIG._7A

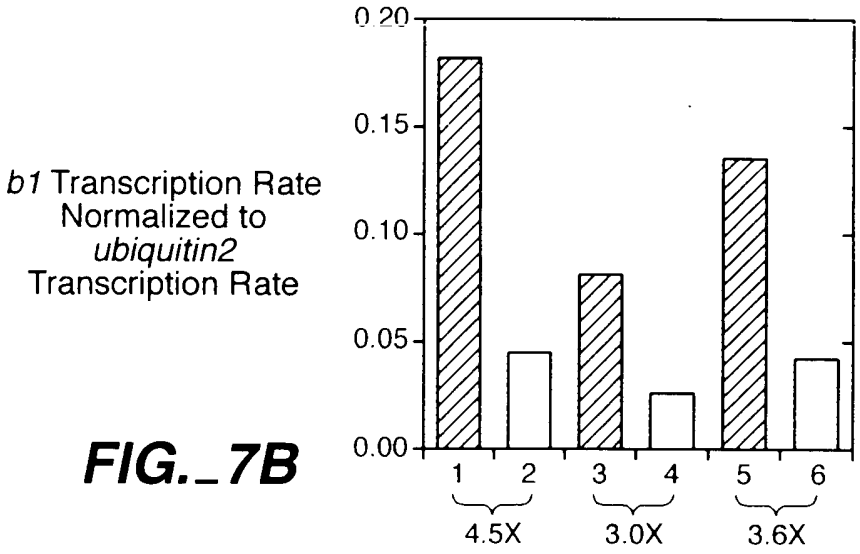


FIG._7B

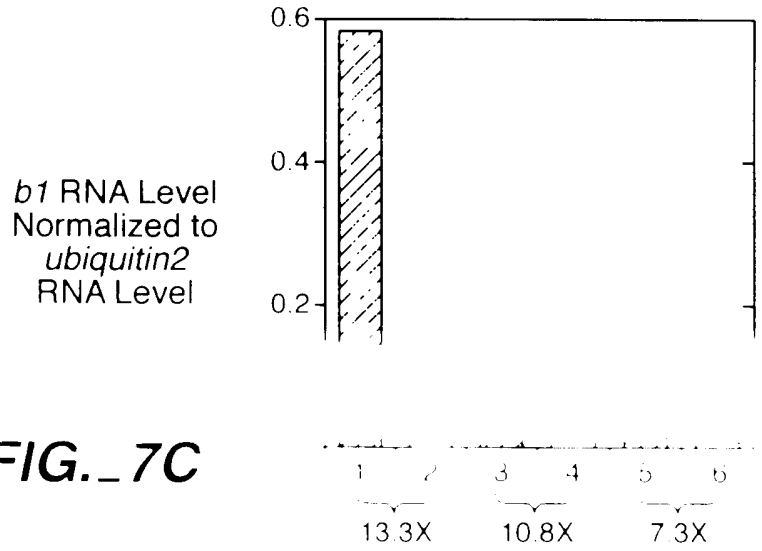


FIG._7C

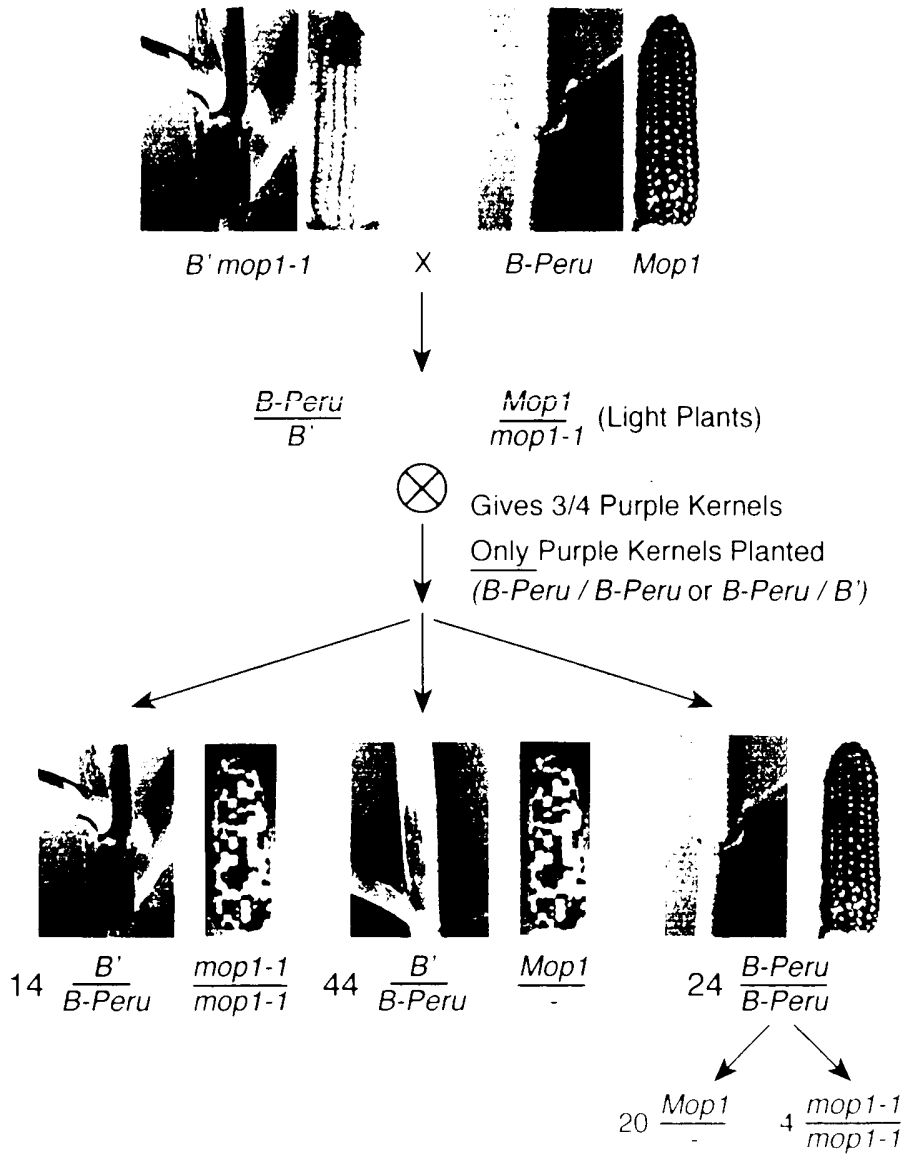
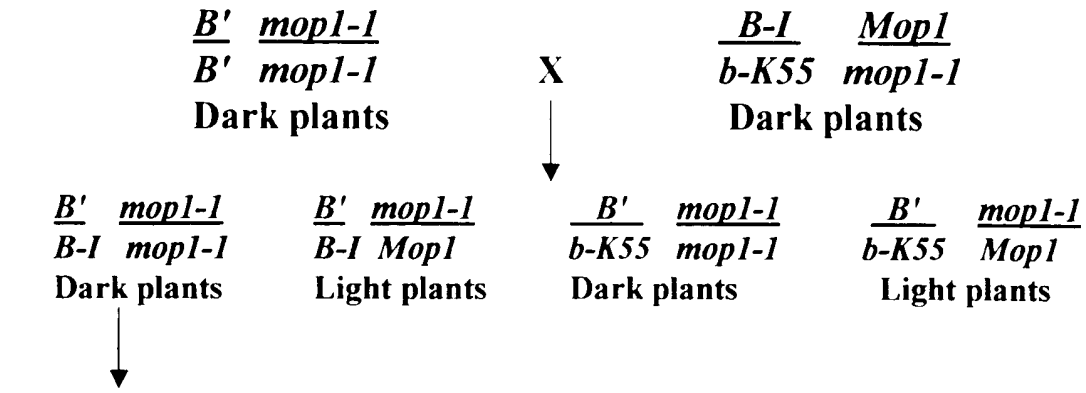

B' mop1-1
X
B-Peru
Mop1
B-Peru / B'
Mop1 / mop1-1
(Light Plants)
Gives 3/4 Purple Kernels
Only Purple Kernels Planted
(B-Peru / B-Peru or B-Peru / B')
14 B' / B-Peru
mop1-1 / mop1-1
44 B' / B-Peru
Mop1 / -
24 B-Peru / B-Peru
20 Mop1 / -
4 mop1-1 / mop1-1

FIG._8



Testcross (by *B-Peru/B-I Mop1/Mop1* tester--diagram shows only *B-Peru* gametes of tester)

Gametes produced if paramutation is prevented (*B-I* —X→ *B'*):

50% B' mop1-1 X *B-Peru Mop1* → *B'* *mop1-1* / *B-Peru* *Mop1* Light plants

50% B-I mop1-1 X *B-Peru Mop1* → *B-I* *mop1-1* / *B-Peru* *Mop1* Dark plants

Gametes produced if paramutation occurred (*B-I* —→ *B'*):

100% B' mop1-1 X *B-Peru Mop1* → *B'* *mop1-1* / *B-Peru* *Mop1* Light plants

FIG._9

R-st / *r-g*	*B-bar* / *B'*	*pl-sr* / *Pl'*	*Mop1* / *mop1-1*	X	*R-d* / *r-g*	*B-bar* / *B'*	*pl-sr* / *Pl'*	*Mop1* / *mop1-1*

Four genotypes of interest among *R-d* - *Pl'* - progeny

3/16	*R-d* / *r-g*	*Mop1* / -	Light plant
3/16	*R-d* / *R-st*	*Mop1* / -	Light plant
1/16	*R-d* / *r-g*	*mop1-1* / *mop1-1*	Dark plant
1/16	*R-d* / *R-st*	*mop1-1* / *mop1-1*	Dark plant

FIG._10A

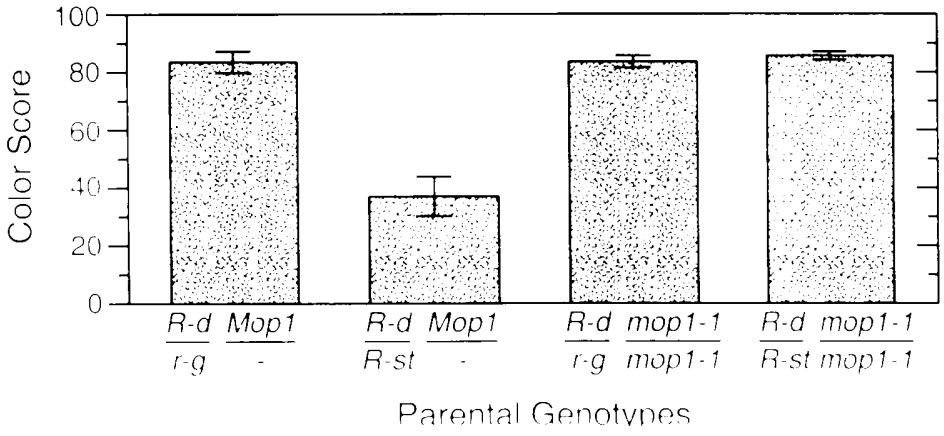


FIG. 10E

FIG._11A

FIG._11B

FIG._11C

FIG._11D

FIG._12A

FIG._12B

FIG._13A

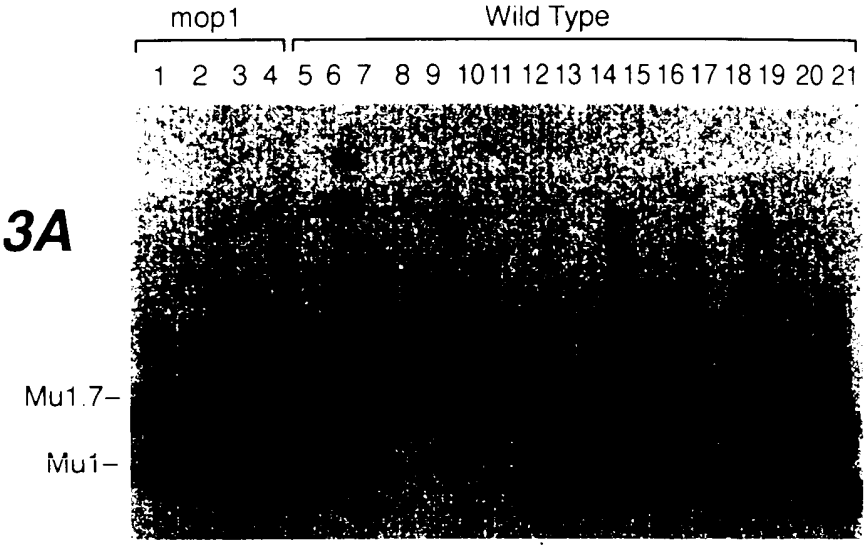


FIG._13B

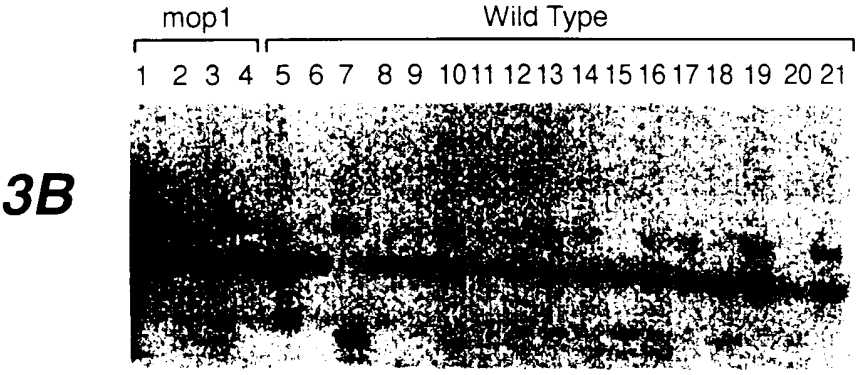
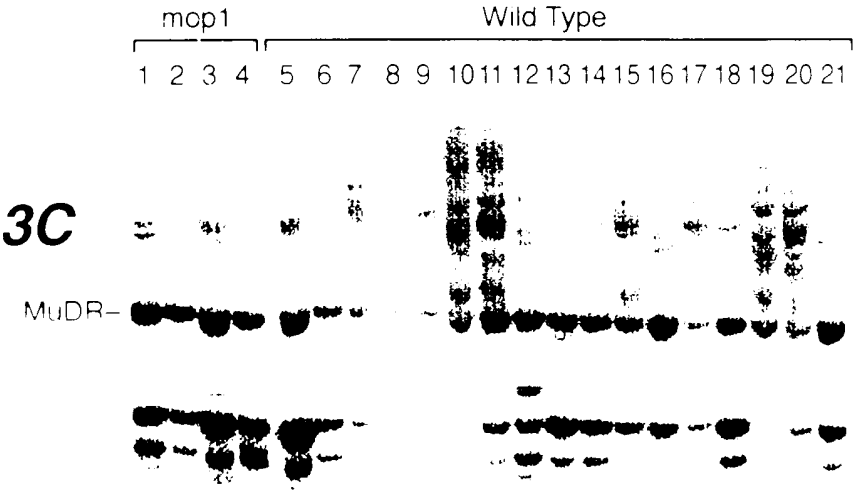


FIG._13C



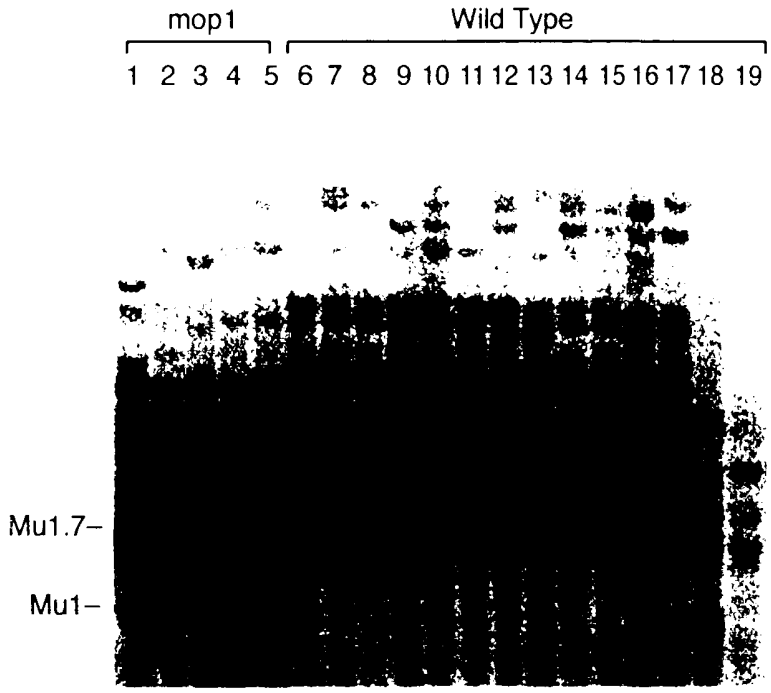


FIG._14A

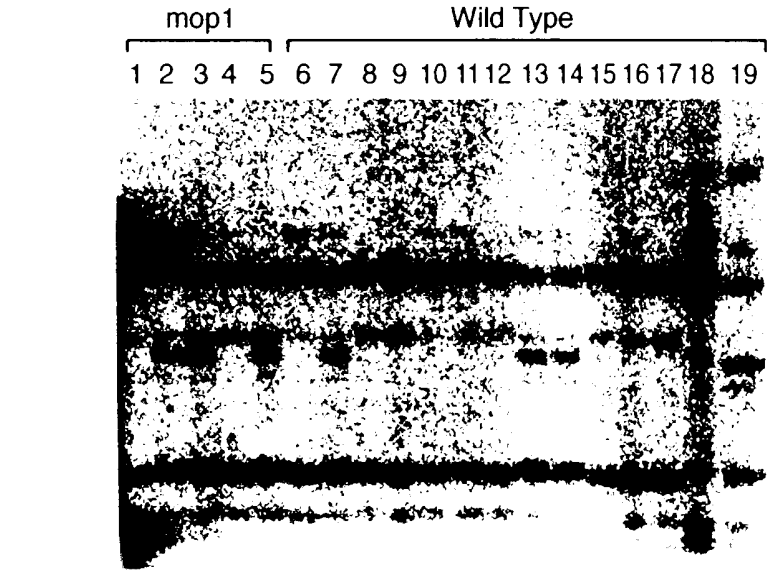


FIG._14B

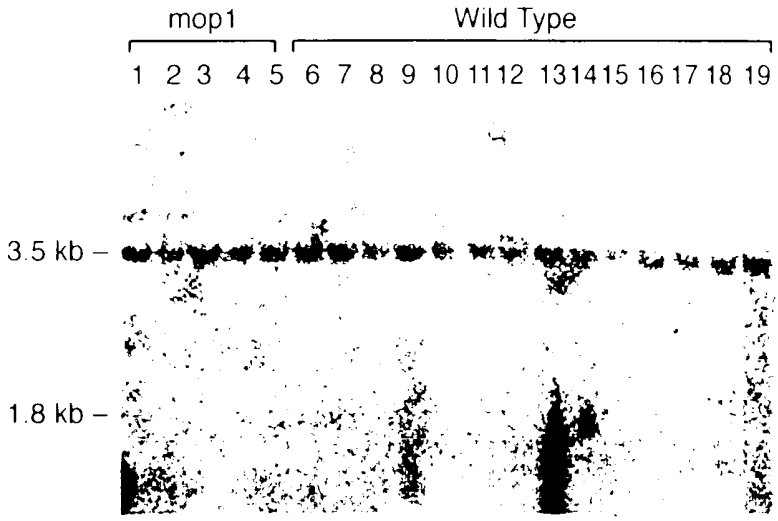


FIG._14C

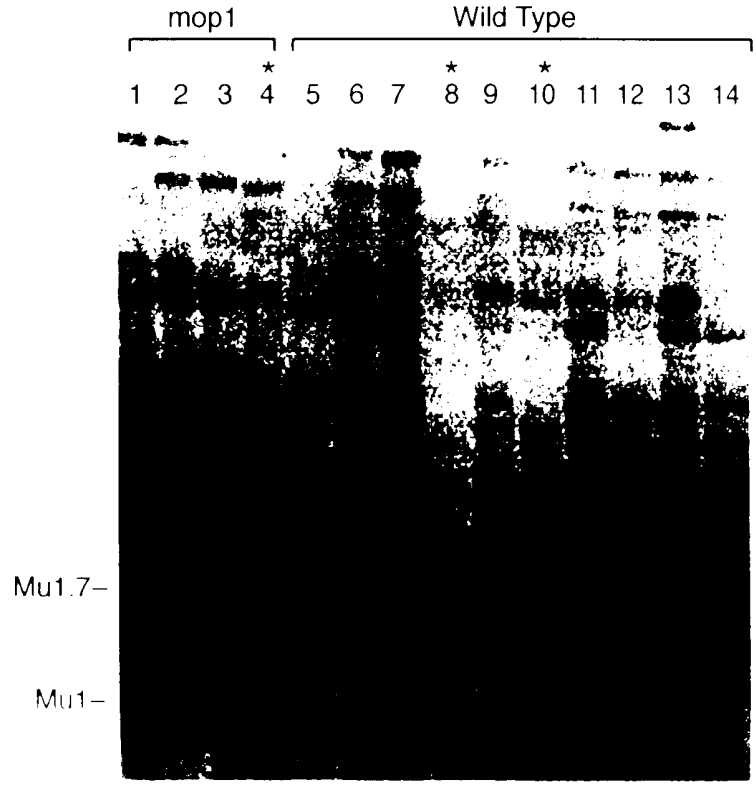


FIG._14D

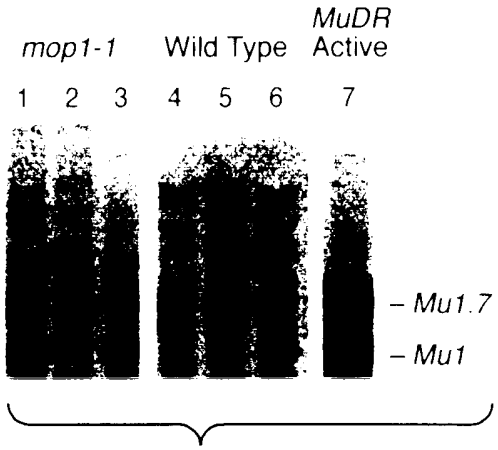


FIG._15A

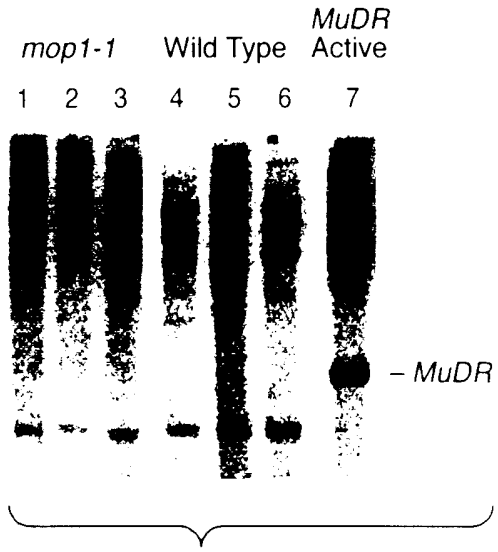


FIG._15B

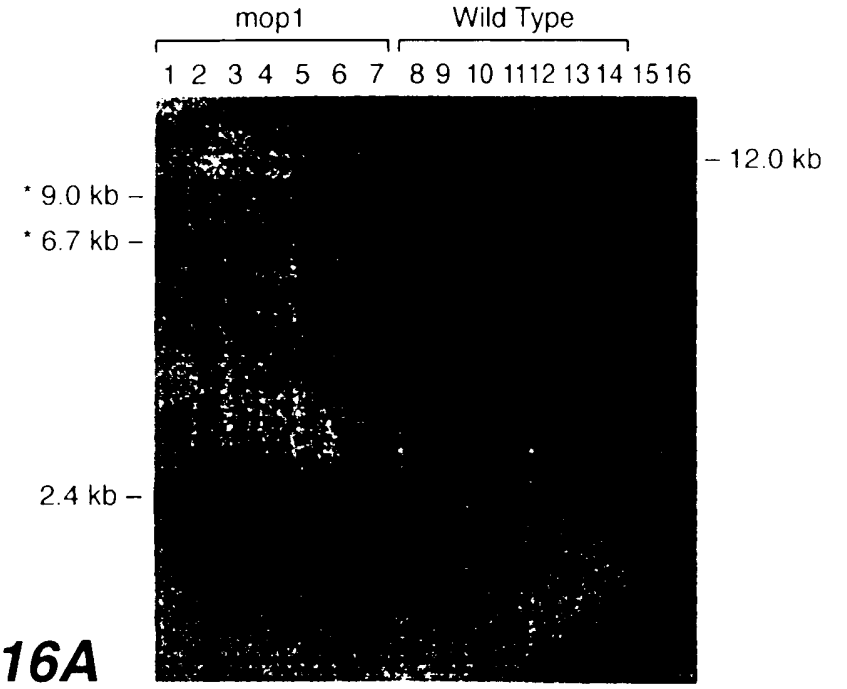


FIG._16A

*Apa*I / *Bam*HI Digest

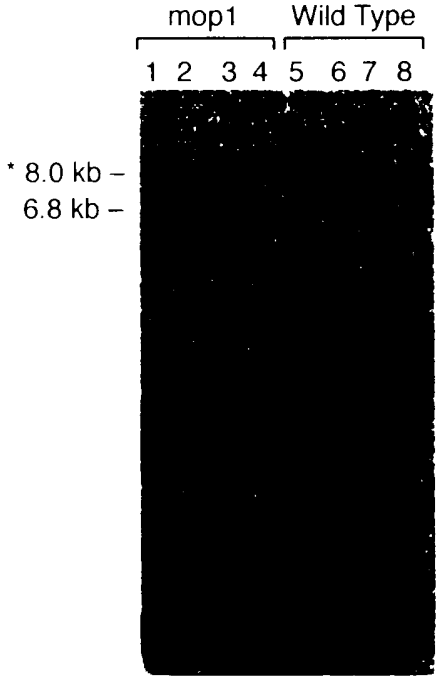


FIG._16B

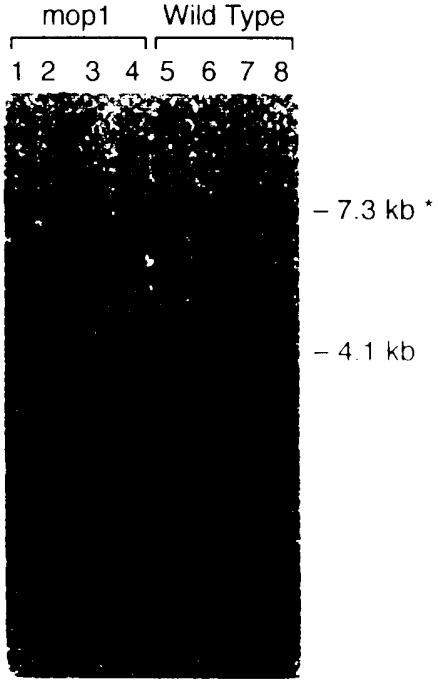


FIG._16C

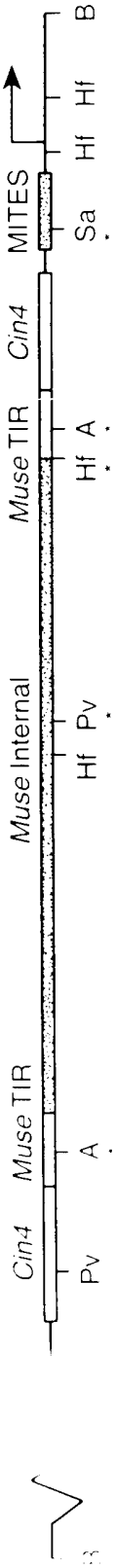

Cin4
Muse TIR
Muse Internal
Muse TIR
Cin4
MITES
Pv
A
Hf Pv
Hf A
Sa
Hf Hf B

FIG._16D

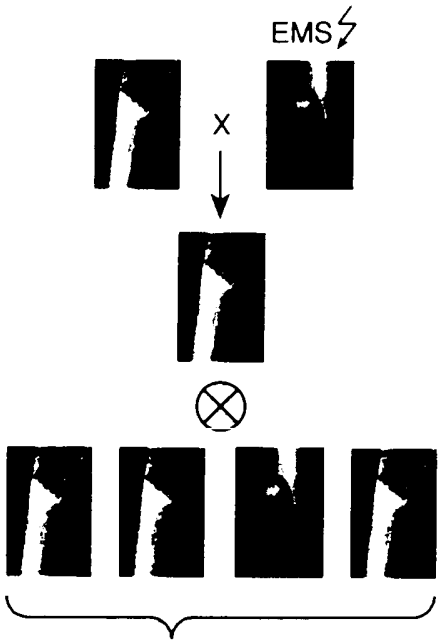


FIG._17

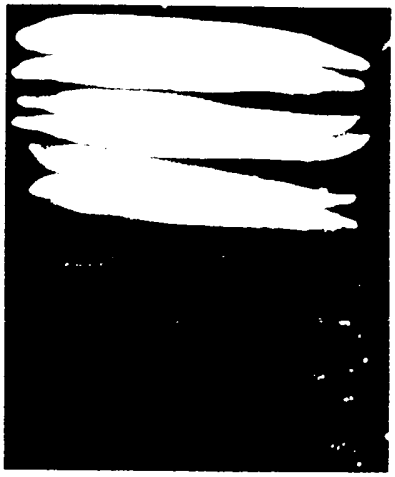


FIG._18A

FIG._18B

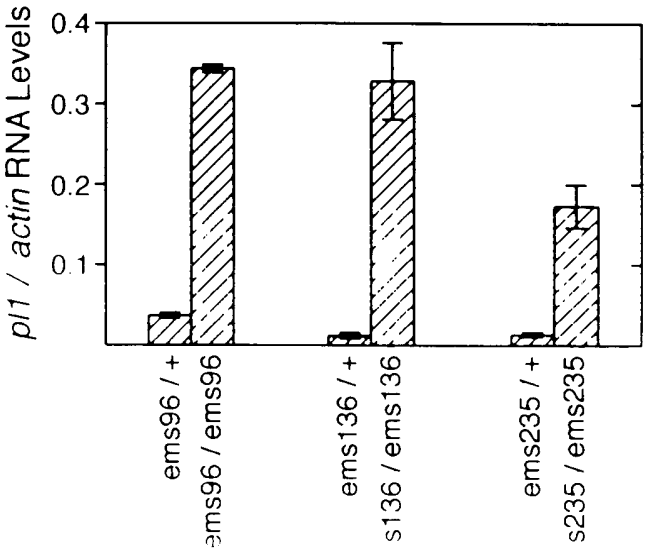
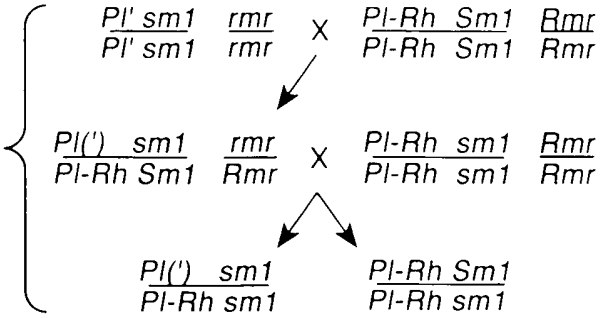


FIG._18C

FIG._19A



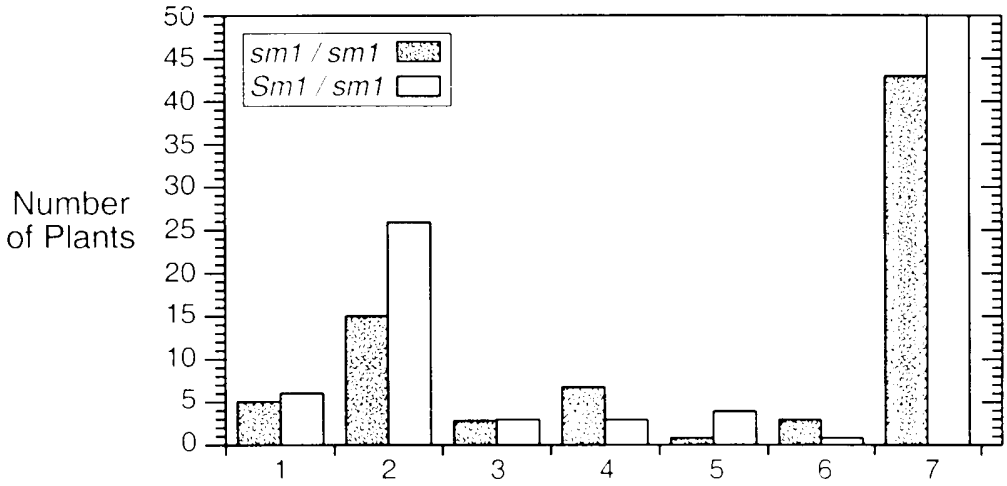


FIG._19B

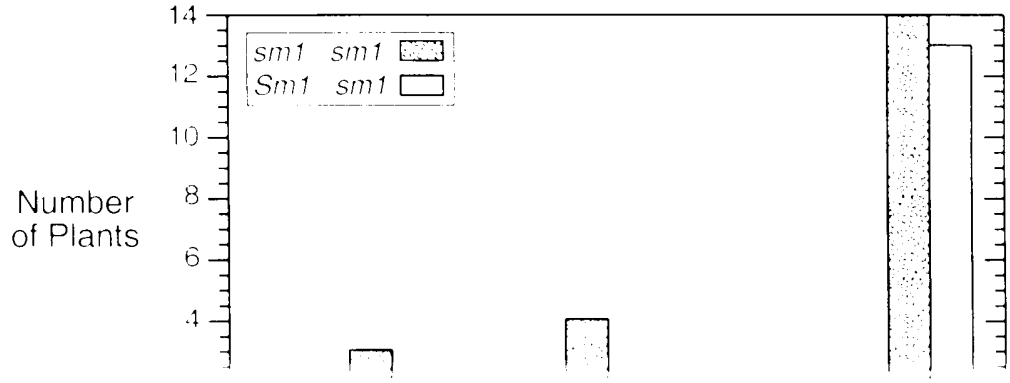


FIG._19C

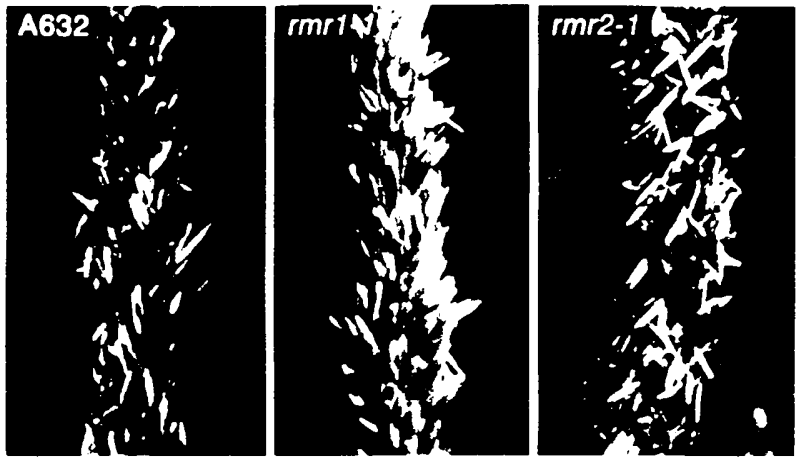


FIG._20

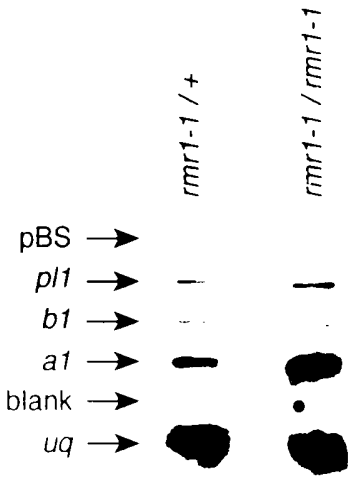


FIG._21A

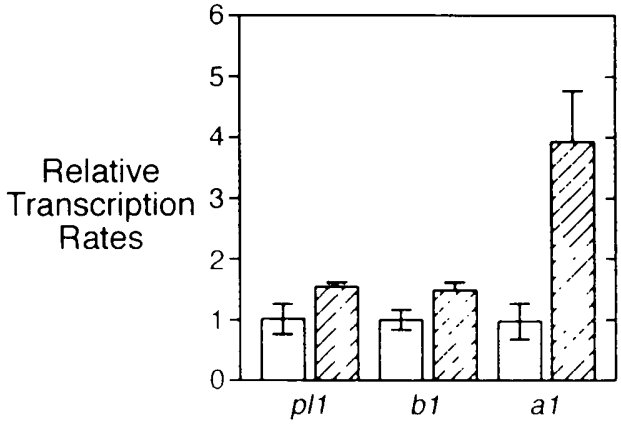


FIG._21B

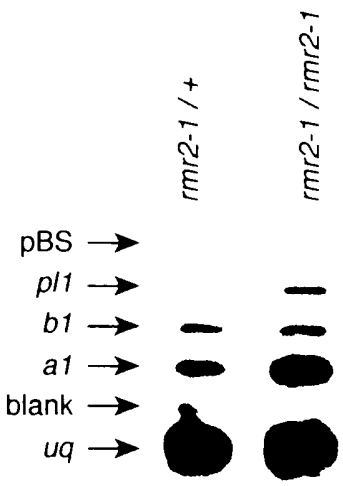


FIG._22A

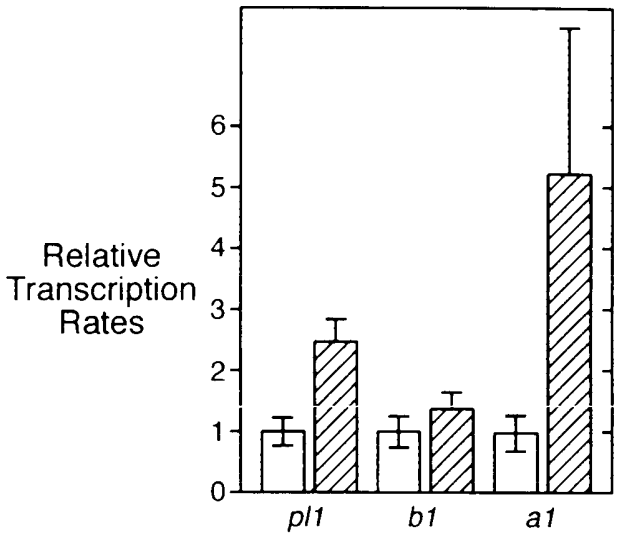


FIG._22B

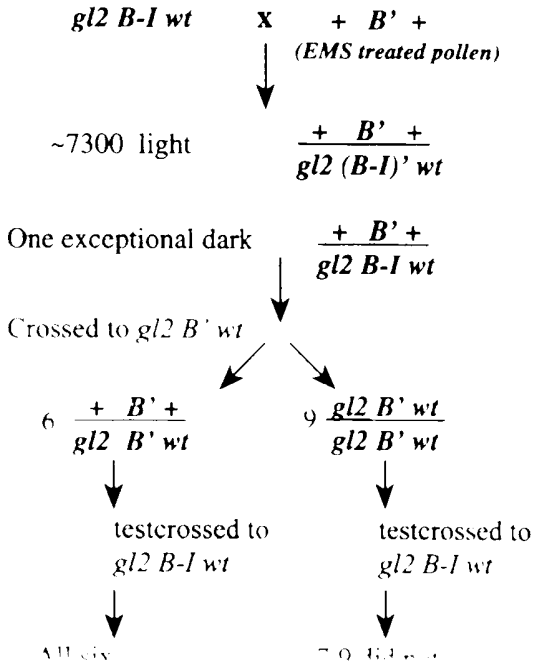


FIG._23

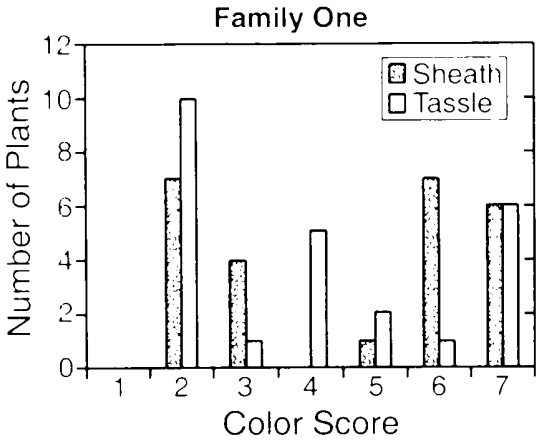


FIG._24A

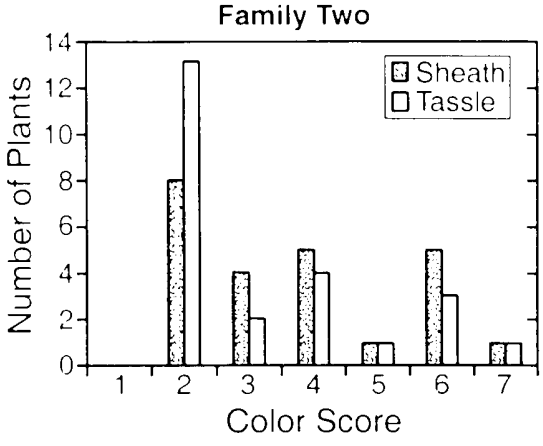


FIG._24B

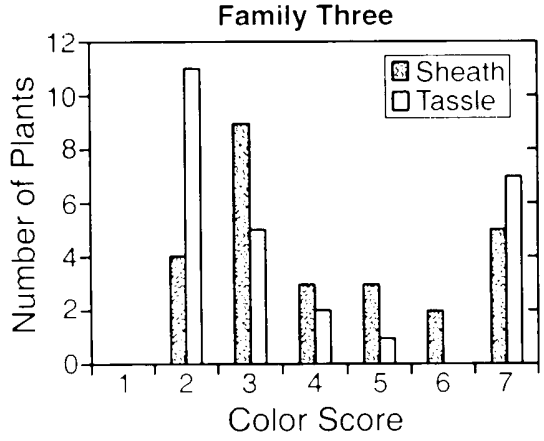


FIG._24C

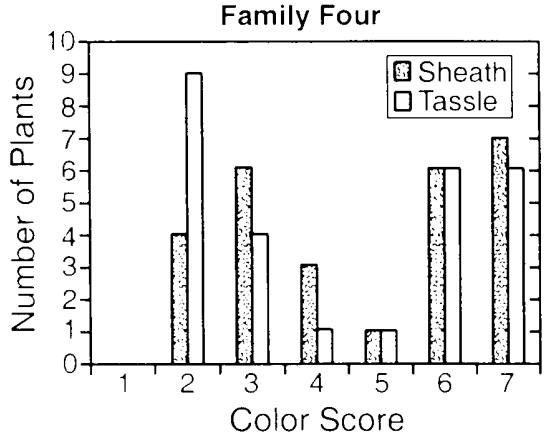


FIG._24D

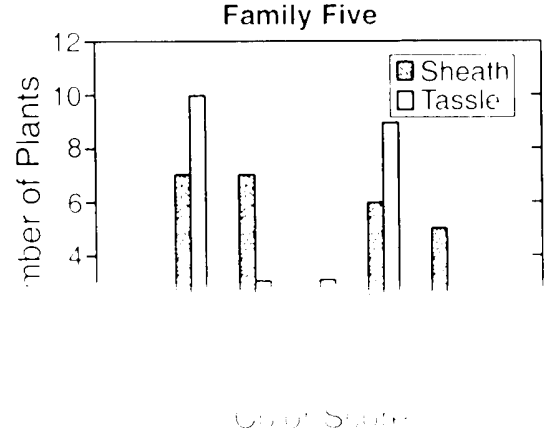


FIG._24E

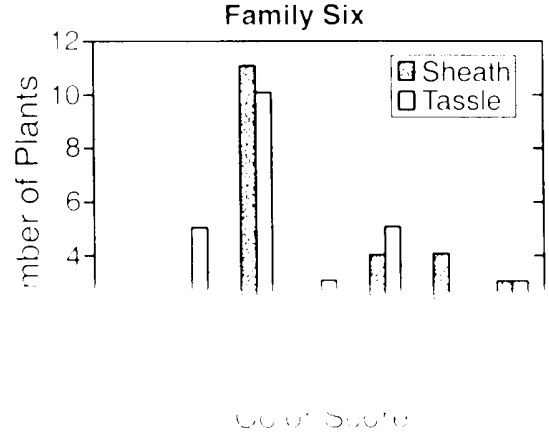


FIG._24F

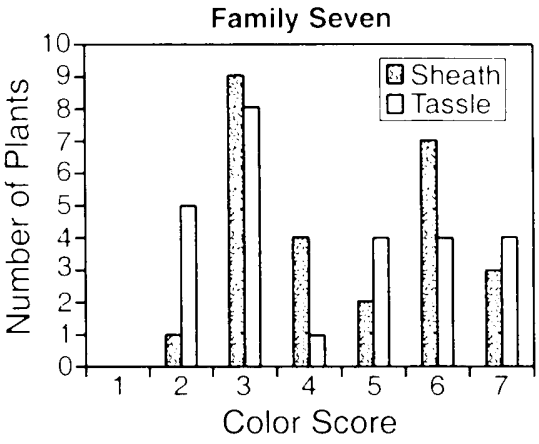


FIG._24G

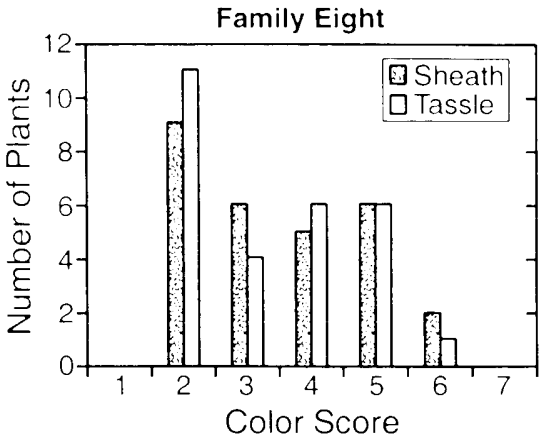


FIG._24H

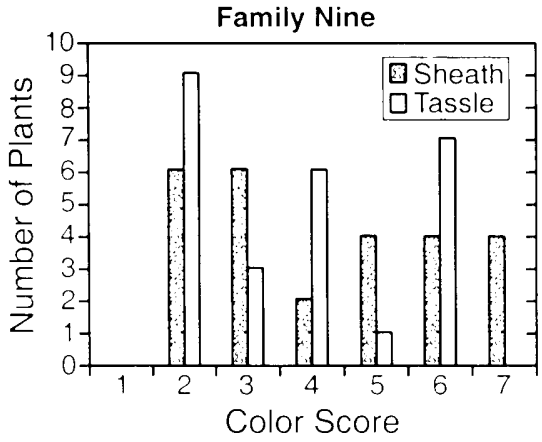


FIG._24I

FIG._25B

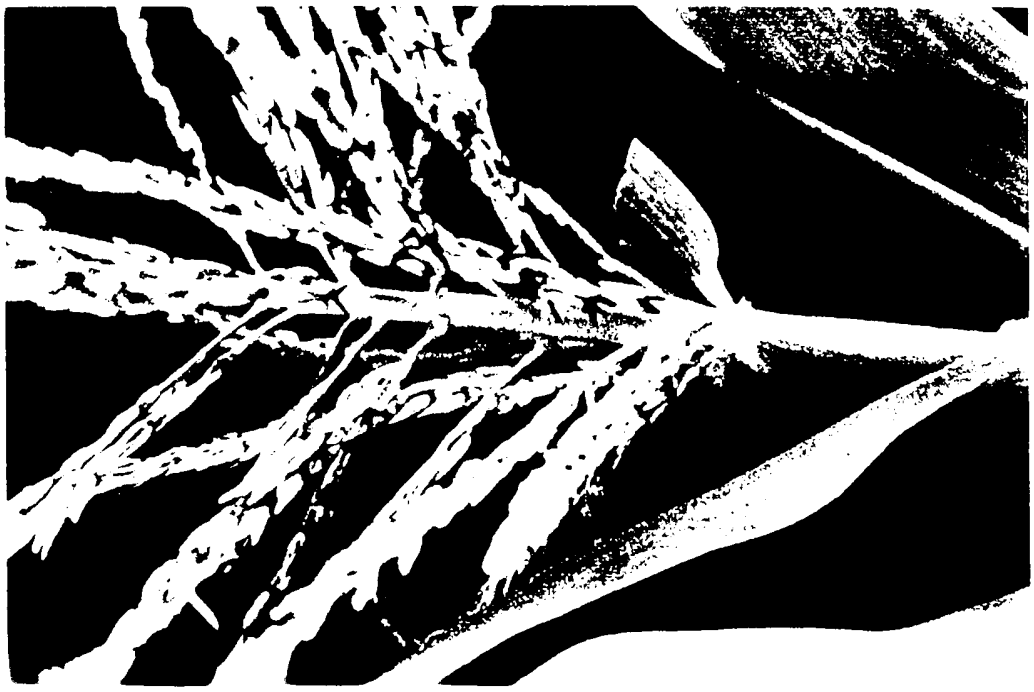


FIG._25A

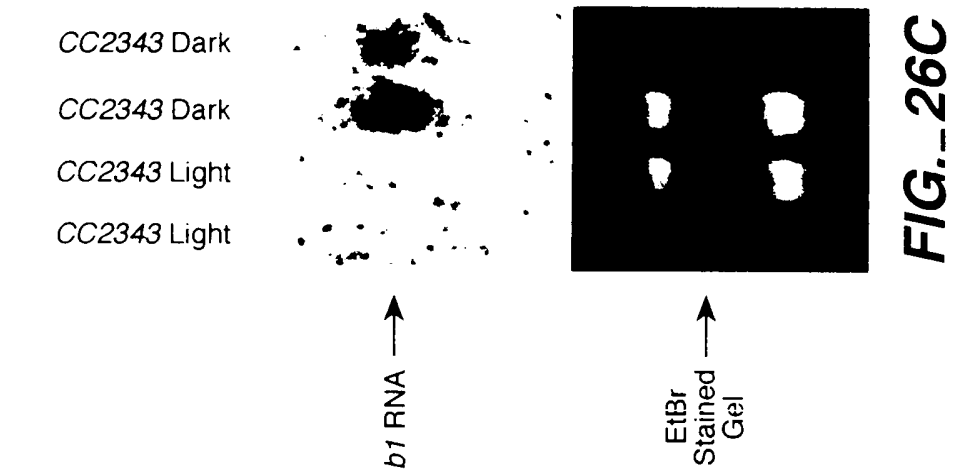


FIG._26C

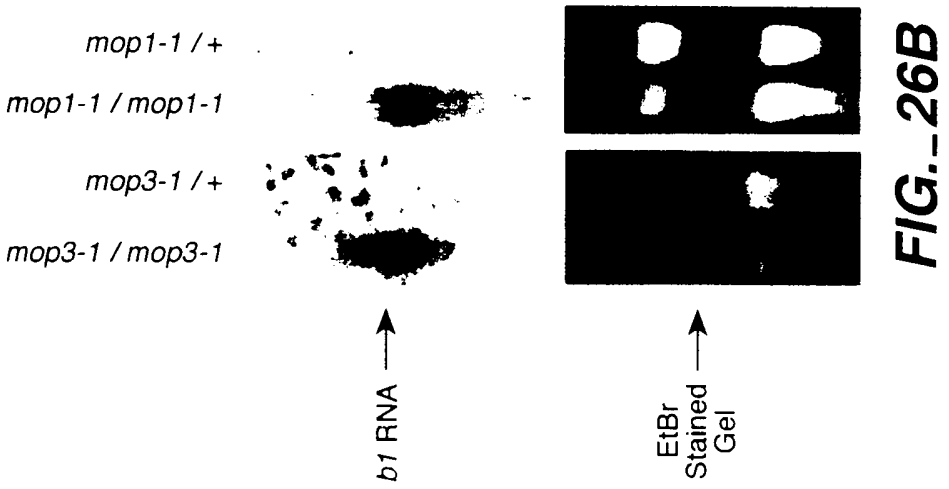


FIG._26B

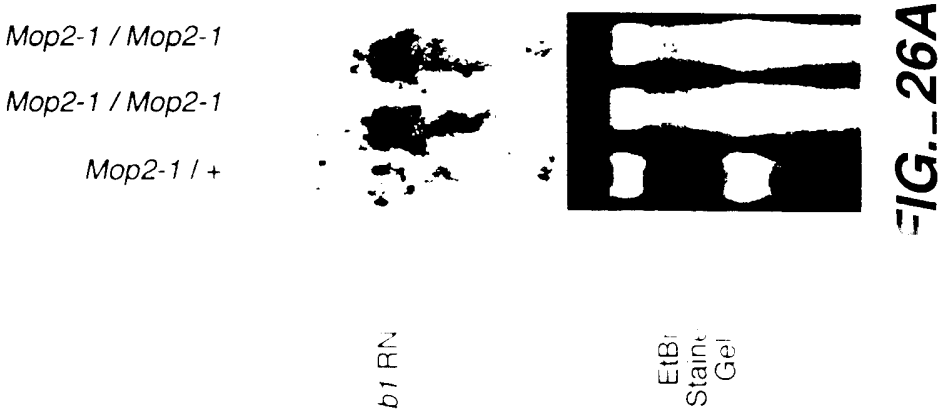


FIG._26A

FIG._27A

FIG._27B

FIG._27C

FIG._27D

FIG._27E

FIG._27F

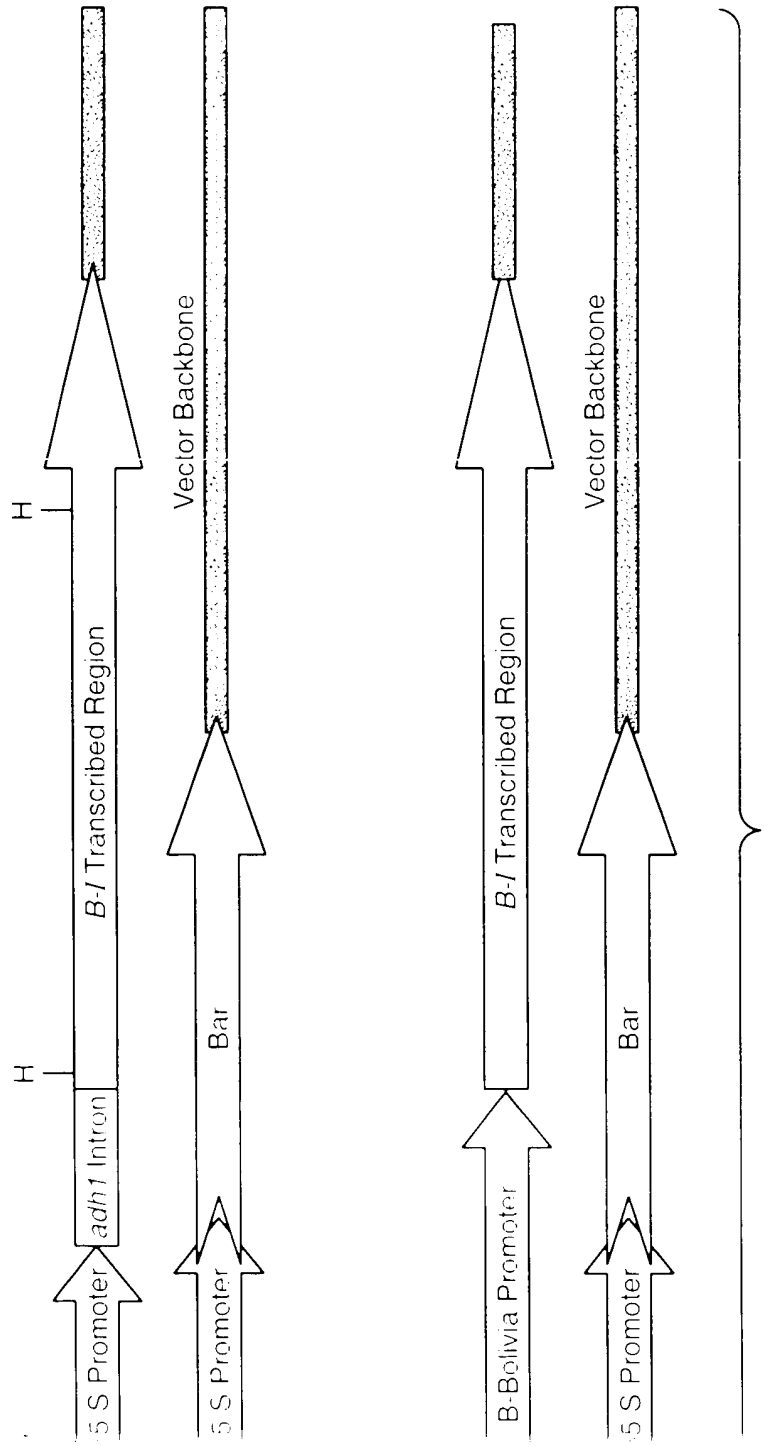

H
5 S Promoter
adh1 Intron
B-I Transcribed Region
H
Vector Backbone
5 S Promoter
Bar
B-Bolivia Promoter
B-I Transcribed Region
Vector Backbone
5 S Promoter
Bar

FIG._28

FIG._29A

B' Mop2-1 / mop2 B' Mop2-1 / Mop2-1

35SB-I

FIG._29B

rmr2-1 / rmr2-1 Rmr2 / rmr2-1

35SB-I

FIG._29C

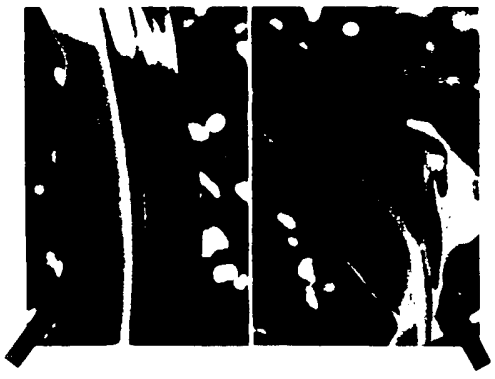
B' mop1-1 / mop1-1 B' Mop1 / mop1-1

35SB-I

FIG._29D

rmr1-1 / rmr1-1 Rmr1 / rmr1-1

35SB-I



Rmr2 / rmr2-1 rmr2-1 / rmr2-1

BBBS

FIG._29E

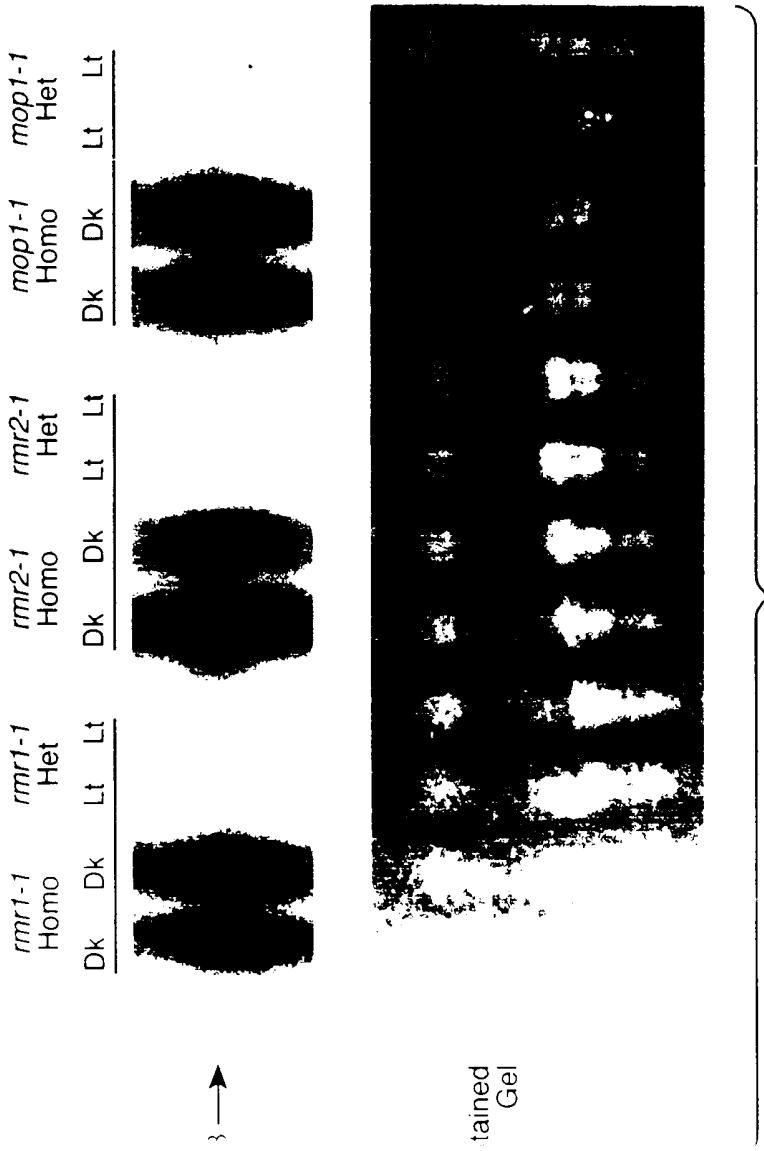

rmr1-1 Homo
Dk Dk Lt
rmr1-1 Het
Dk Dk Lt
rmr2-1 Homo
Dk Dk Lt
rmr2-1 Het
Dk Dk Lt
mop1-1 Homo
Dk Dk Lt
mop1-1 Het
Dk Dk Lt
tained Gel

FIG._30

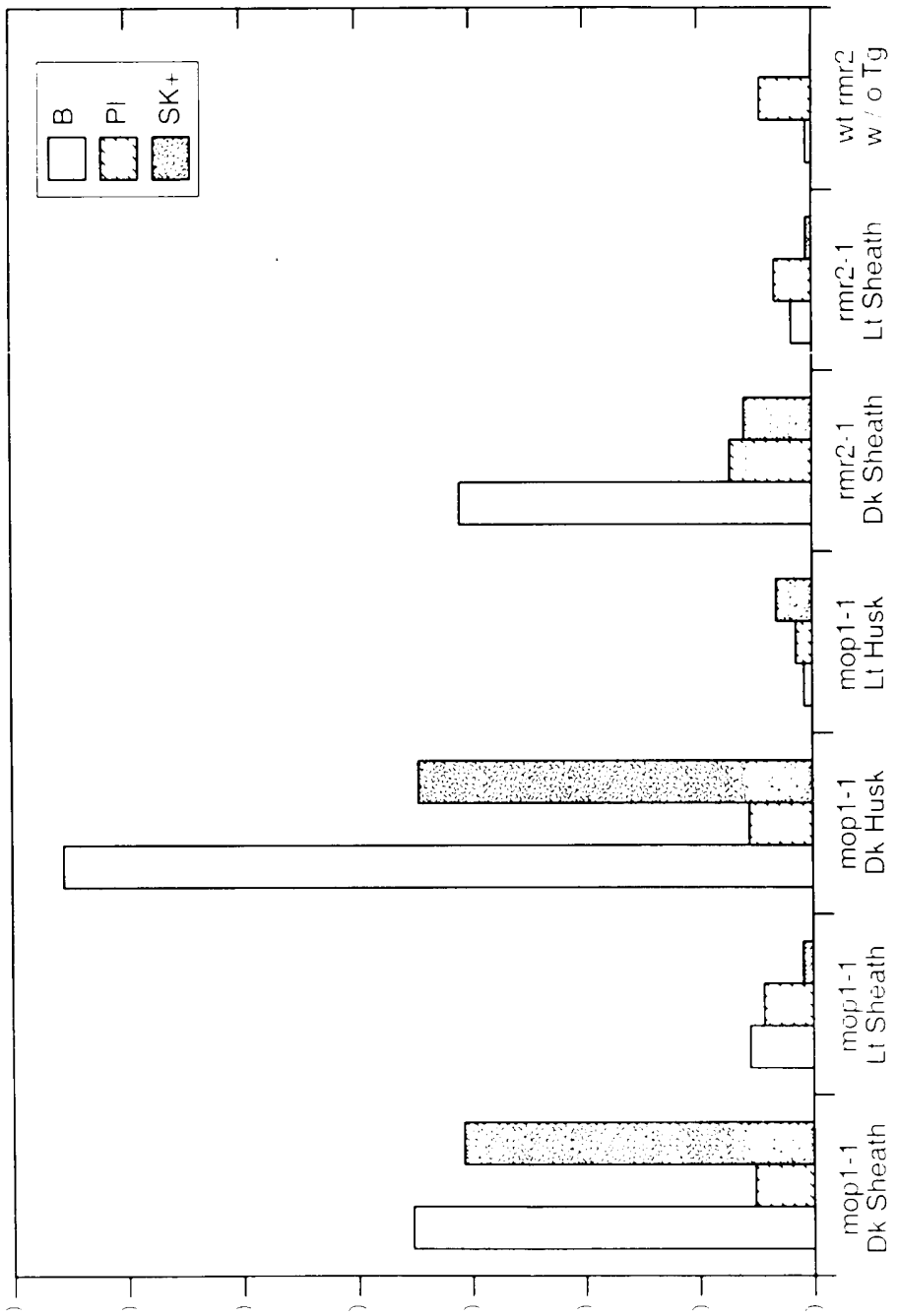

B
PI
SK+
mop1-1 Dk Sheath
mop1-1 Lt Sheath
mop1-1 Dk Husk
mop1-1 Lt Husk
rmr2-1 Dk Sheath
rmr2-1 Lt Sheath
wt rmr2 w / o Tg

FIG._31

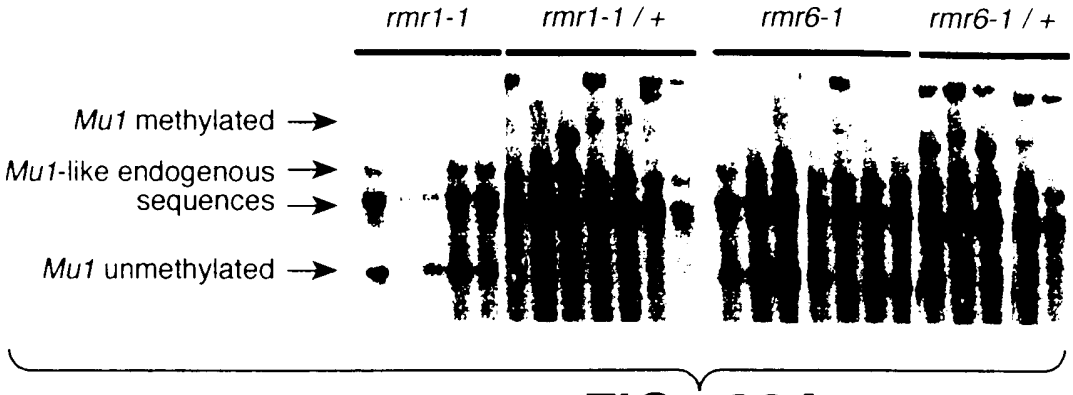


FIG._32A

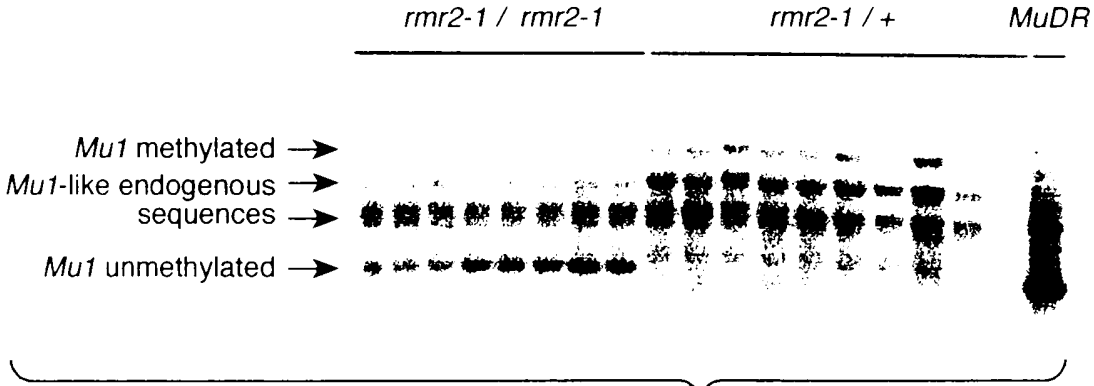


FIG._32B

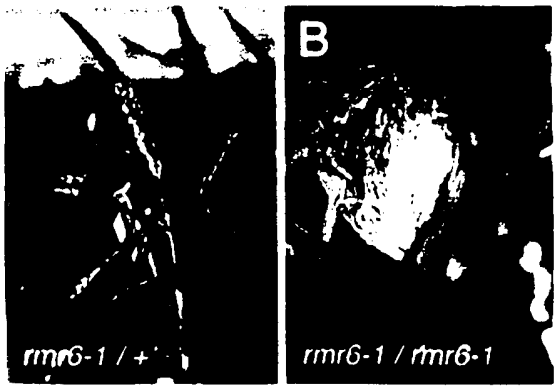


FIG._33A FIG._33B

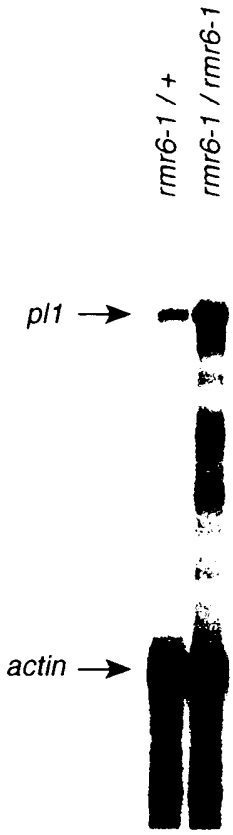


FIG._34A

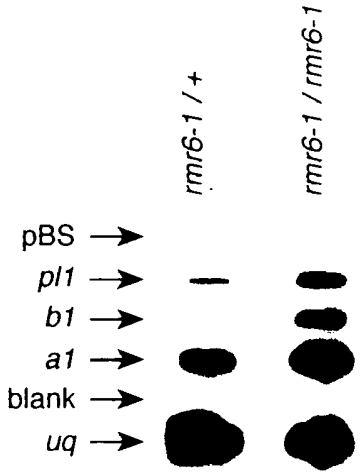


FIG._34B

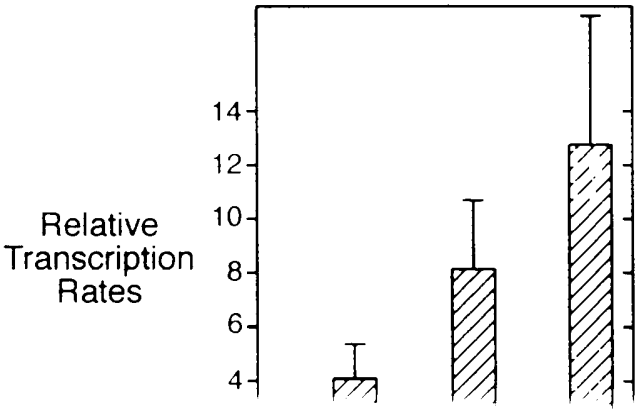


FIG._34C